

# Workstation Ergonomics and How to avoid Pain

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[www.ssptdc.com](http://www.ssptdc.com)

**SPORTS + SPINAL**  
PHYSICAL THERAPY

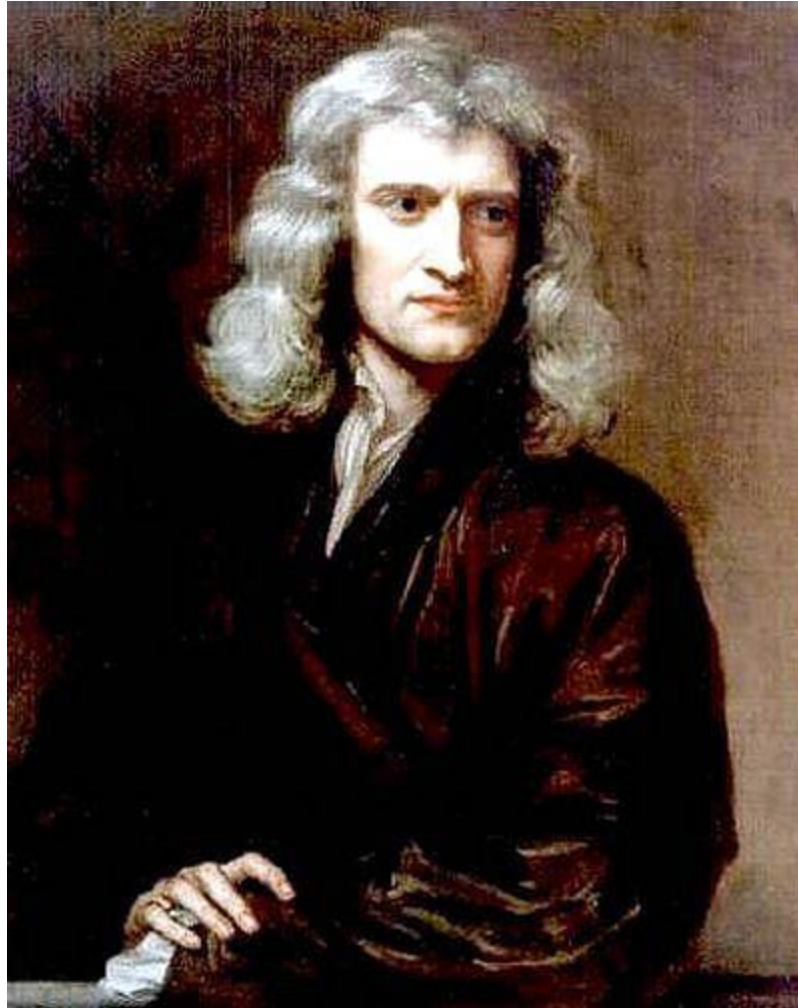
# Objectives

- 1) Discuss basic principles of workstation ergonomics.
- 2) Discuss adaptive equipment to enhance desk ergonomics.
- 3) Review anatomy of areas commonly strained with repetitive stress syndrome.
- 4) Discuss symptoms related to musculoskeletal repetitive stress
- 5) Review therapeutic exercise to perform at workstation

# FULL DISCLOSURE



# Grandfather of posture?



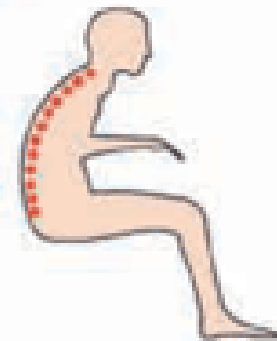
# What letter are you?

**“S”**



OR

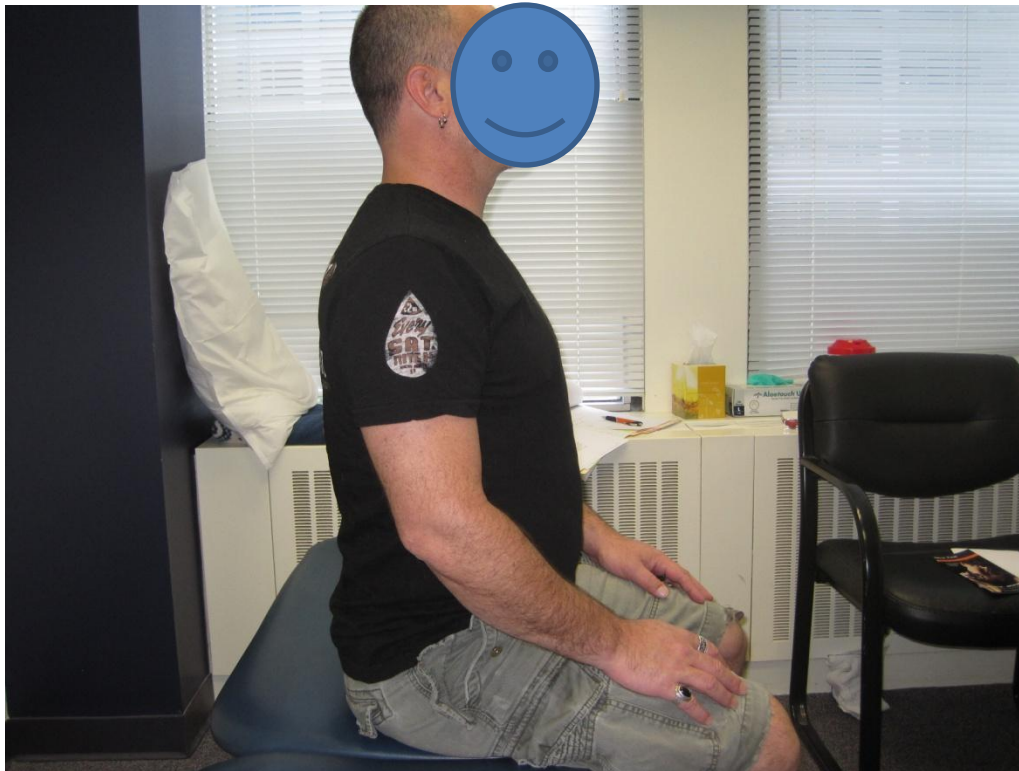
**“C”**



# Postural Imbalance

- Elongated muscles become weakened
- Shortened muscles become stiff
- Curves in spine become exaggerated
- Joints of spine become stiff
- Muscles and joints are asked to assume new roles which they do not do well!

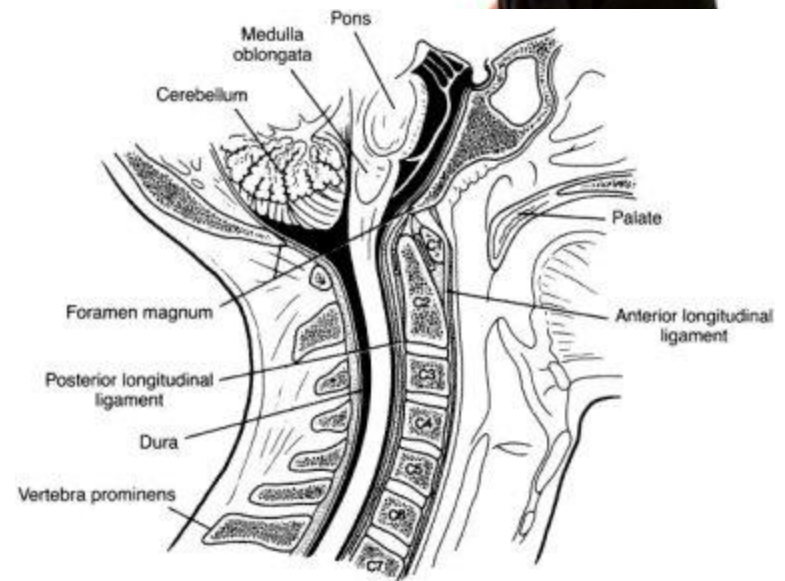
# Which posture would encourage neck pain?





# Neutral Neck

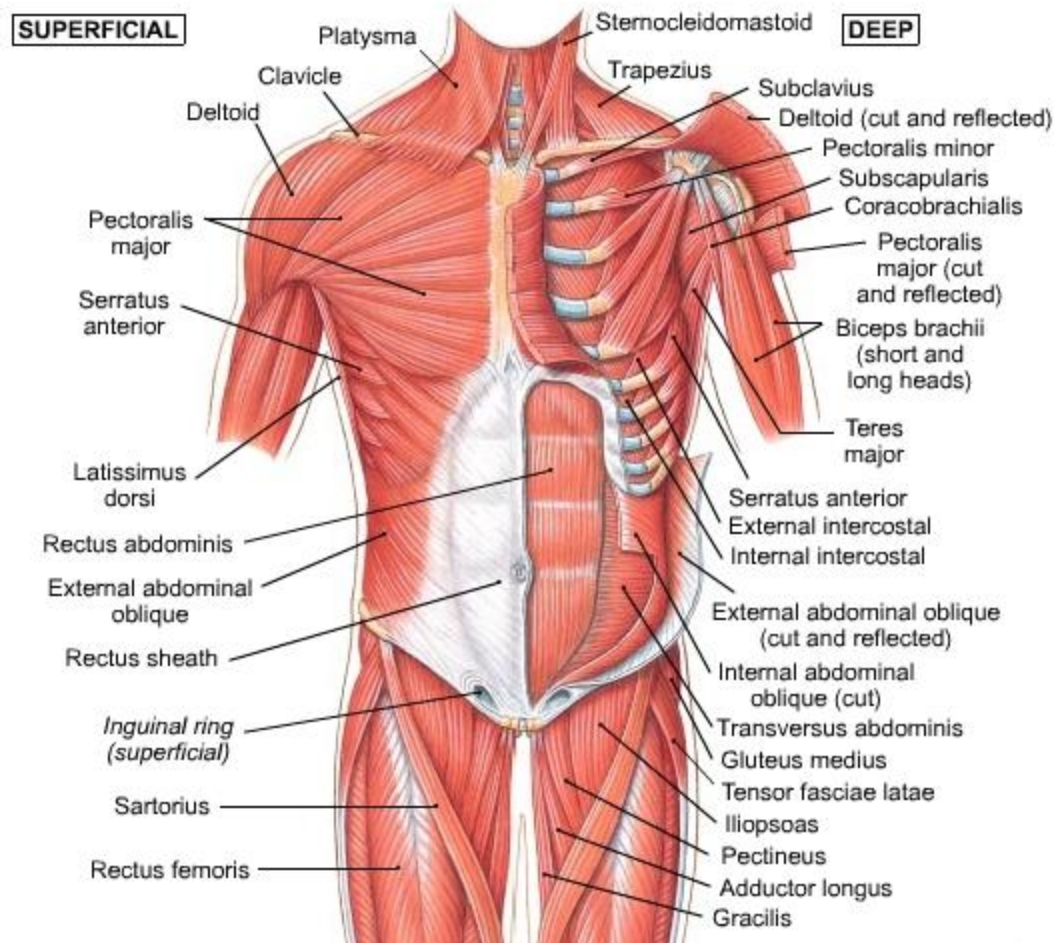
Gently bring chin to  
adam's apple which  
pulls tight stabilizing  
ligaments in back of  
neck. Back of neck  
elongates. Should feel  
like a string pulling  
head to ceiling







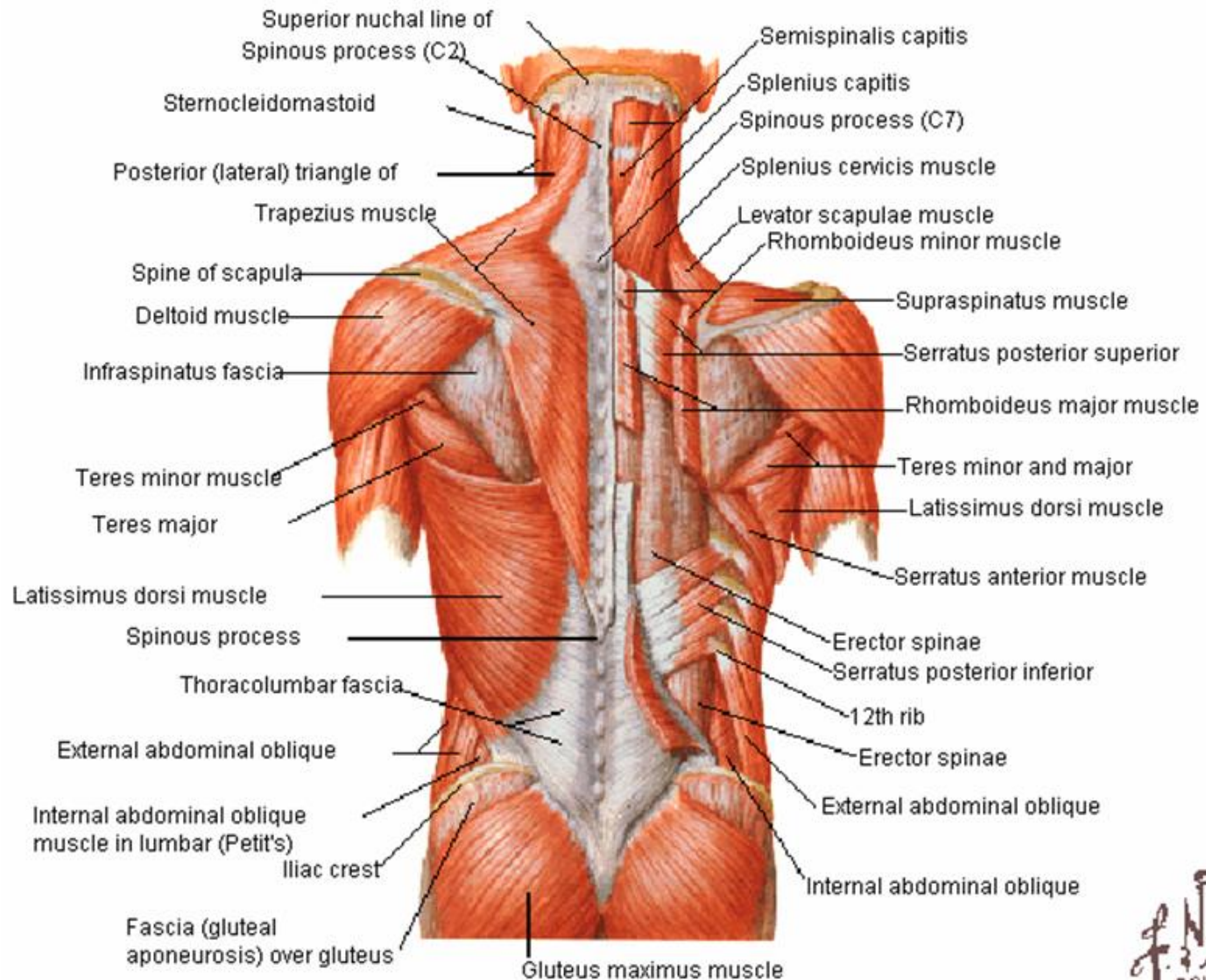
# Anatomy 101



# Review of anatomy

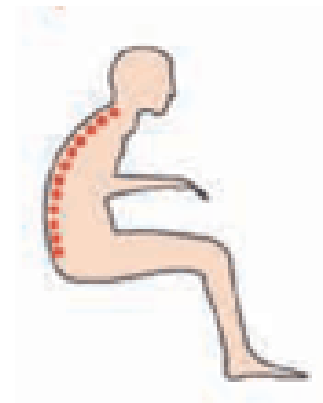
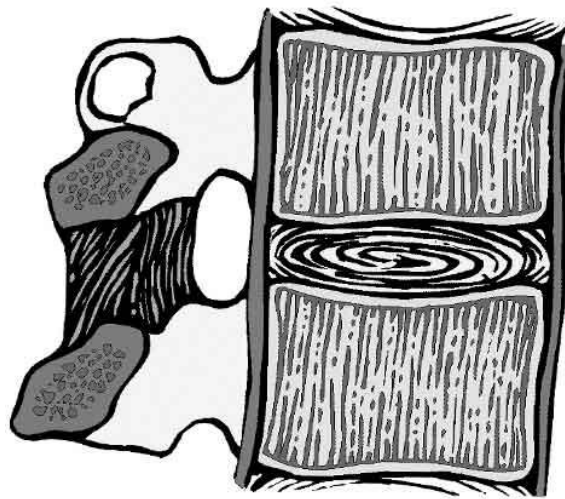
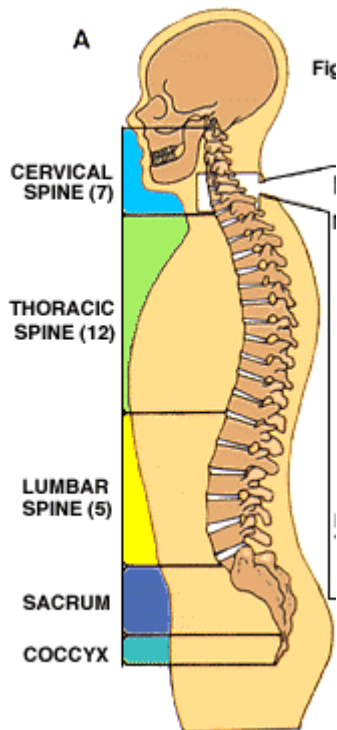
Snapped with HyperSnap-DX  
<http://www.hyperionics.com>

## Muscles of Back Superficial Layers

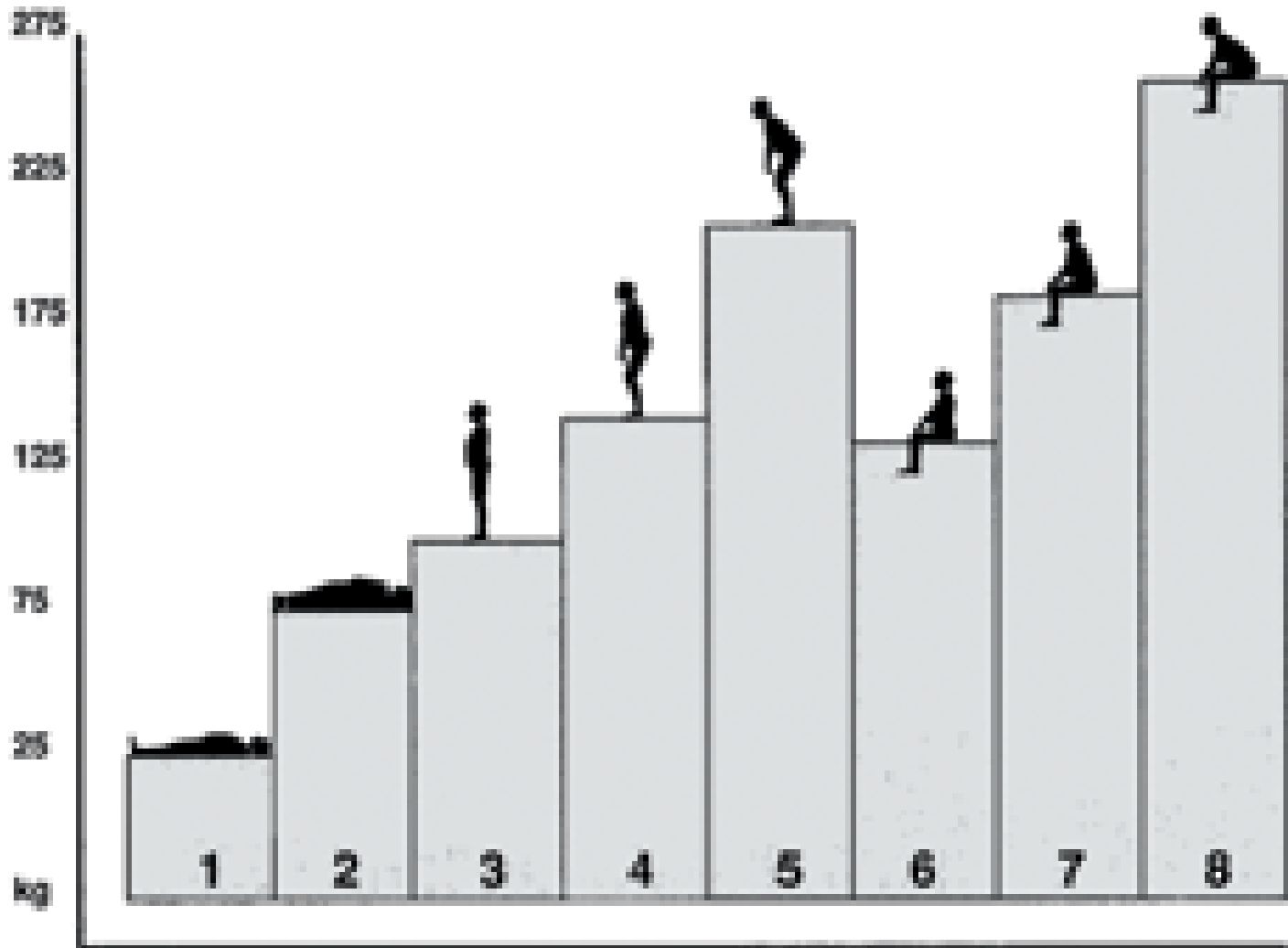


*F. Netter M.D.*

# Intervetertebral disc pathology

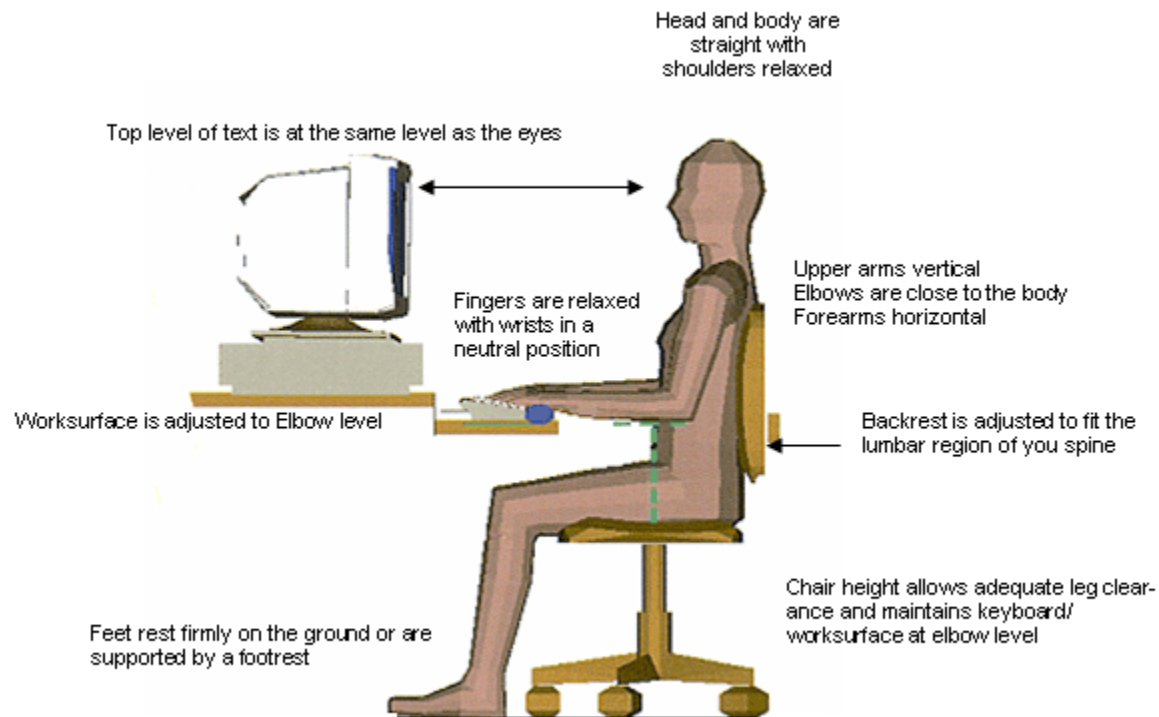


# Pressure on intervertebral discs





# Basic desk set-up



Consider basic elements from the ground up.....

<http://www.osha.gov/SLTC/etools/computerworkstations/checklist.html>

# Basic Setup

Set-up should facilitate upright posture and maintenance of appropriate angles at elbows, hips, knees and spine.





# Monitor

## Monitor Tips:

- \*Place monitor directly in front of you
- \*Place monitor arm's length away from you
- \*Elevate monitor so top of screen is at eye level



# Keyboard / Mouse

## Keyboard tips:

- \*Position directly in front of you, within reach
- \*Wrists should be in neutral position
- \* Shoulders should be relaxed and close to body



## Mouse Tips:

- Keep mouse close to keyboard, within reach
- Use keyboard short-cuts to reduce extended use
- Consider alternating hand used for mouse

**Consider wireless for both....**

# Chair

Features to look for:

- 1) Wheels
- 2) Swivel
- 3) Adjustable seat height, arm rests
- 4) Lumbar support
- 5) Tilt control



ADJUSTABILITY!

# Adaptive equipment



# Headset

Allows user to keep  
cervical spine in  
neutral position.

Wide range of costs \$50-  
200

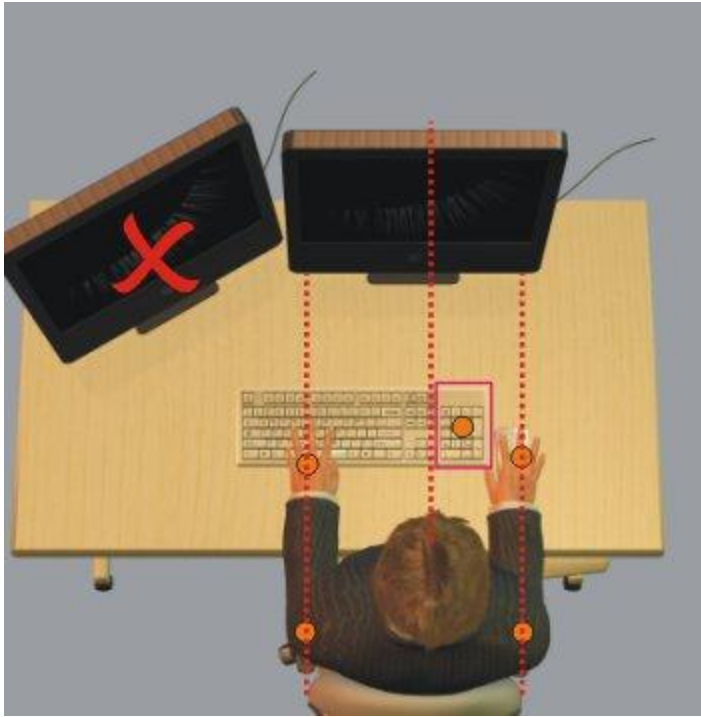


# Pull-out tray

Allows keyboard to be brought close to user so elbow is maintained at right angle. This helps avoid pulling shoulder blades forward, rounding of shoulders.



# Environment





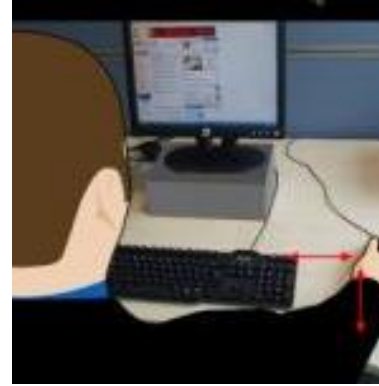
# Alternate positions



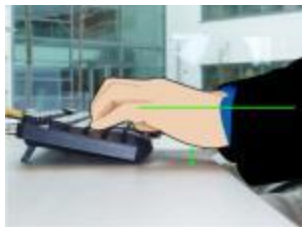
OSHA

# Even the best desk set-up can be flawed by your habits

- Think about your habitual tasks and movements
  - How frequently you take microbreaks
  - Twisting
  - How you reach or squat
  - How you interact with your environment including colleagues



The  
Good



The Bad



# Signs and symptoms repetitive strain

Numbness or a burning sensation in the hand

Reduced grip strength in the hand

Swelling or stiffness in the joints

Pain in wrists, forearms, elbows, neck, or back

Reduced range of motion in the shoulder, neck, or back

Dry, itchy, or sore eyes

Blurred or double vision

Aching or tingling

Cramping

Weakness

# Exercises



Shrugs



Reaching back



Hand shaking

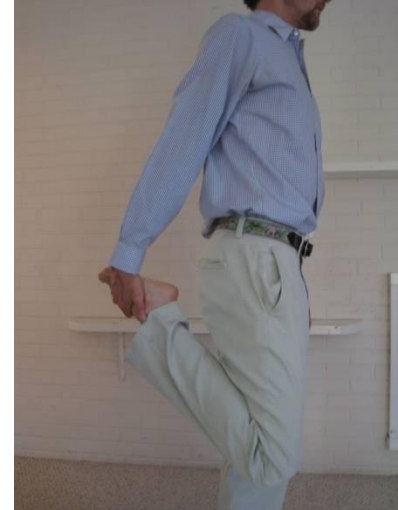




Hug knee to opposite shoulder



Warrior



Quad stretch



Shoulder blade squeezes



Hamstring stretch

# Movement is GOOD

- Brings nutrition to joints
- Enhances bloodflow
- Relieves pressure
- Allows you to change positions and postures



# Best Posture

- There is no “single” correct posture to be used throughout the workday.
- Think about a cycle of postures that one uses during the day to provide variety.

# Take Home

- MOVE
- MOVE often
- MOVE in ways that are different
- MOVE into postures that oppose gravity's pull
- And LISTEN to your body.....

# Questions?

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**"It's called Ergonomics."**

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PHYSICAL THERAPY



Thank you...

